

**U.S. FISH AND WILDLIFE SERVICE
SPOTLIGHT SPECIES ACTION PLAN**

Common Name: Holmgren milk-vetch
Scientific Name: *Astragalus holmgreniorum*
Lead Region: Mountain-Prairie Region (Region 6), Denver, Colorado
Lead Field Office: Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, Utah 84119
801-975-3330

Species Information:

Status: Endangered
Recovery Priority Number: 5C.
Recovery Plan: Recovery Plan for Holmgren milk-vetch (*Astragalus holmgreniorum*) and Shivwits milk-vetch (*Astragalus ampullarioides*) (2006)
5-year Review: Completed April 2007
Other: Final Listing Rule (66 FR 49560- 49567, effective on Oct. 29, 2001)
Final Critical Habitat Designation (71 FR 77972, Dec. 27, 2006).

Threats:

Threats to the Holmgren milk-vetch include land development/urban expansion; off-road vehicle (ORV) use; illegal dumping; climate change; livestock grazing and invasion by exotic plant species. Habitat loss and disturbance could cause the extirpation of local populations and is an imminent concern for the Central Valley population which supports an estimated one-third of all Holmgren milk-vetch individuals and is located within the "South Block" lands proposed for development as a high-density residential community. Natural resource utilization for outdoor recreation, particularly ORV use, affects all populations and is expected to continue.

Although long-term changes in regional precipitation and temperature regimes may affect the distribution and viability of this species in the future, much uncertainty remains about climatic trends and the ability of Holmgren milk-vetch to adapt. The primary concern is the potential for drought to outlast the period over which the species can withstand consecutive years of reduced reproductive output and seedbank depletion.

Impacts associated with cattle grazing include trampling of individual plants as well as the defoliation and removal of palatable plant species, which changes plant community structure; soil compaction; abrasion, and destabilization; and redistribution of soil nutrients and ecological succession. Soil compaction due to trampling and ORV use can reduce germination and establishment of seedlings as well as reduce the ability for moisture to penetrate into soils.

Introduction of invasive plants is one of the fastest growing threats for many rare species. Bringing invasive species under control once they are established is difficult. Fire frequency may also increase with the spread of invasive plant species. Reduced availability of pollinators due to habitat loss could severely reduce Holmgren milk-vetch population viability.

Target:

- Species status maintained or improved on federal lands. Conservation efforts should focus on reducing unauthorized uses (e.g. illegal off-road vehicle use) to ensure long-term protection and extending surveys to expand populations.
- Species extinction prevented on private and state lands. Because the main threat to the Holmgren milk-vetch is habitat destruction and 50% of known populations occur on state owned lands, conservation options should focus on facilitating ownership of occupied habitat by entities with the capacity for long term conservation.

Measure:

Reduce threats to populations on federal lands to maintain or improve species status by providing protective fencing and increasing law enforcement efforts. Potentially increase known population sites or known occupancy through increase survey efforts on federal lands. Prevent extinction for populations on state and private lands by land trades, purchases, conservation easements, or other measures that secure state or private land for conservation.

Actions:

The following actions are from the Holmgren Milk-Vetch Recovery Plan and will be implemented during the next 5 years to meet the species target.

1. Maintain and increase Holmgren milk-vetch natural habitat on Federal lands. Pursue administrative protections in order to remove land trades that incur land development within Holmgren milk-vetch habitat. Define appropriate recreational or land- use designations.

Threats / Listing Factors Addressed: Factor A, Recovery Action 1.1.1

Estimated Costs: \$40,000 annually for the next 5 years for administrative protection.

Responsible Parties: USFWS, BLM

2. As described in the 2005 Letter of Intent with the State of Utah School and Institutional Trust Lands Administration (SITLA), signatories will acquire approximately 166 acres of land west of I-15. This will be accomplished through either trade or purchase within the next 5 years.

Threats/Listing Factors Addressed: Factors A & D, Recovery Action 1.1.3

Estimated Costs: \$ 6.64 million, estimated value of 166 acres at \$40,000 an acre, plus agency salaries and processing costs.

Responsible Parties: USFWS, BLM Utah, SITLA, NGO, Private

3. Write agreements and receive signatory to acquire land or place land in conservation in perpetuity for Holmgren milk-vetch populations at Gardner Well in Arizona and Central Valley in Utah through respective BLM and state agencies and non-governmental entities.

Threats/Listing Factors Addressed: Factors A & D, Recovery Action 1.1.3

Estimated Costs: Agency salaries and legal review.

Responsible parties: USFWS, LG, OSA, SITLA, Arizona State Land Department (ASLD), NGO, Private

4. Maintain and improve fencing at protected population sites, and enforce regulations to prevent unauthorized land uses; efforts will concentrate at fenced population areas (Purgatory Flats, South Hills, Stucki Spring and State Line).

Threats/Listing Factors Addressed: Factors A&D, Recovery Actions 1.2.2, 1.2.3, 1.2.4

Estimated Costs: \$56,000 annually for the next 5 years

Responsible Parties: USFWS, BLM, SITLA, ASLD, LG, NGO, Private

5. Initiate and implement full range-wide monitoring with standardization to include sites previously not monitored in Arizona and Utah with a centralized database.

Threats/Listing Factors Addressed: Recovery Action 2.2.3; 3.1, 3.2, 3.4, P-1, P6.

Estimated Costs: \$25,000 annually for the next 5 years

Responsible Parties: USFWS, BLM, USGS, FHWA, SITLA, ASLD, NGO, Acad Inst

6. Survey suitable habitats at sites between and adjacent to known populations and designated critical habitat.

Threats/Listing Factors Addressed: Recovery Actions 2.2.1, P-4 and P-6

Estimated Costs: \$15,000 annually for the next 5 years

Responsible Parties: USFWS, BLM, SITLA, ASLD, LG, NGO, Private, volunteers

7. Initiate seed dispersal and predation study to more accurately model Holmgren milk-vetch life history.

Threats/Listing Factors Addressed: Factor A, Recovery Action 4.4.9, T-2

Estimated Costs: \$24,000 for a 2 year project

Responsible Parties: USFWS, NGO, USGS, BLM, Acad. Institutions

8. Investigate genetic variation within and among populations.

Threats/Listing Factors Addressed: Factor E, Recovery Action 4.4.5, T-9

Estimated Costs: \$25,000 (initial research & travel)

Responsible Parties: USFWS, USGS, Acad. institutions

9. Develop a brochure on listed plants for Mohave and Washington Counties, for distribution at the BLM Visitor Center. Make presentations to educate public on the status and protection methods of the listed plant species in Washington & Mohave Counties.

Threats/Listing Factors Addressed: Factor A, Recovery Action 8.2, T-2

Estimated Costs: \$9,000

Responsible Parties: USFWS, BLM, USGS, SITLA, ASLD, NGO

Role of other agencies:

The recovery of this species on Federal land requires continued agency efforts of the BLM (St. George Field Office (UT) and Arizona Strip Field Office), particularly for maintaining and patrolling conservation areas, maintaining fences, monitoring & enforcing ORV use, and providing on-site education. Partnerships and long-term agreements with SITLA and ASLD for land conservation are essential, because these state entities own substantial Holmgren milk-vetch land within the Central

Valley, State Line, and Gardner Well populations. The USFWS continues to engage non-government entities, such as The Nature Conservancy (TNC), SITLA, Red Butte Gardens, and the Center for Plant Conservation to continue surveys, monitoring, and research efforts. The USGS is spearheading a genetics study to identify genetic diversity within individuals in a population and between populations.

Role of other ESA programs:

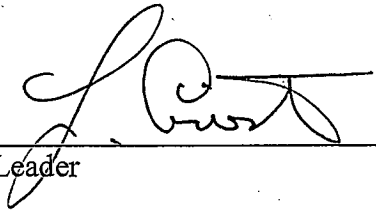
When there is a federal nexus, section 7 consultations will incorporate conservation measures to minimize and compensate for loss of occupied and potential habitat. Desert Tortoise HCP includes goals for other rare species and may provide funding or resources. Arizona and Utah section 6 monies could contribute to land conservation and protection, surveys, mapping, seed collection and storage and development and implementation of rangewide monitoring goals. USGS Science Support Program and Recovery Budget Initiative (Showing Success/ Preventing Extinction) are also available for on-the-ground conservation.

Role of other FWS programs:

The Partners for Fish & Wildlife Program should support fencing projects if land becomes privately acquired, such as by TNC. Other funding opportunities may become available.

Additional funding analysis:

Approximately 50% of occupied habitat occurs in targeted areas for development on ASLD and SITLA lands. The acquisition of land and its protection would directly offset population loss and would highly improve recovery scenarios. Estimated cost of purchasing all critical habitats in Central Valley and Gardner Well from state land agencies is conservatively estimated at over 55 million dollars. Although full recovery of the species may only be possible through land conservation, all conservation methods and research are necessary to determine the best ways to proceed under likely funding constraints. Research on climate change and how changes in temperature and precipitation patterns may affect Holmgren milk-vetch populations and their habitat is also needed. Climate change studies should focus on demographic modeling, seed viability studies, ex-situ and in-situ conservation and augmentation, and changes in community structure and composition. Studies also need to establish how pollinators and pollinator interactions are affected by climate change.



Project Leader

9/18/09

Date